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SOCIO-ECONOMIC ANALYSIS OF GUNA MELON PRODUCTION IN YOBE STATE, NIGERIA.

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ABSTRACT

A socio-economic analysis of guna melon production in Yobe State, Nigeria was the major objective of the study. Specifically, the study estimated the profitability of guna melon production in the State, identified some socio-economic characteristics of the farmers and isolated some problems of the farmers militating against guna melon production. An interview schedule was used to obtain primary data from guna melon farmers randomly selected from the three major guna melon producing Local Government Areas, (L.G.As), namely, Nguru, Gashua and Machina. Results show that the production of guna melon in the study area was profitable. This is because the total costs was found to be ₦4,190.00; the gross income, ₦6,000.00 and the net return was income, ₦1,810.00. The results also show that majority of the farmers were: between 30-50 years old, married, from extended families, without formal education, civil servants/teachers and having over 2 ha. of farm land. Some major problems of the guna melon farmers included the following: capital, labour, high cost of inputs, availability of credit facilities, security of land and transportation. It was recommended that there should be a re-organisation of rural financial institutions, mass transport agencies and the land-use act in order to make credit facilities more accessible to farmers, ease transport problems and minimise crises arising from land use respectively.

Key words: Guna melon production

INTRODUCTION

Yobe is essentially an agricultural State and distinguishes itself in both animal and crop production. Cattle, sheep, and goats, camels, donkeys and poultry are some of the livestock produced. Grain crops such as maize, millet, sorghum, rice and guna melons are some major crops grown. Vegetables such as tomatoes, amaranthus, onions and pepper are also grown, especially during the harmmattan in the fadamas.

Being an arid State, rain falls less than four months of the year. This is suitable for the growth and development of the guna melon, requiring little water. The guna melon is an intercrop and is sown when the major crop such as sorghum and millet are maturing. It continues its growth and development after the harvest of the major crop (during the dry season).

The guna melon is of immense importance to the economy of the farm family in a number of ways. The leaves and stems after harvest are used in feeding livestock. This is critical because during this season, animal feed are rare. The seed is used in the production of vegetable oil for human consumption. The oil is considered a delicacy and used in preparation of meals especially during important functions. The residue after extracting the oil from the seed is used to thicken soups and also to feed livestock.

The crop yields revenue to farmers because of the patronage from industrial vegetable oil processors as well as local consumers. The industries are located within and outside the State, and there are potentialities for export.

Objectives of the Study

Based on the unique agronomic qualities of the guna melon and its importance to the farmer, the study has as its major objective, an analysis of the socio-economic factors associated with its production. The specific objectives are to:

1. identify the socio-economic characteristics of the guna melon farmers,
2. estmate the profitability of the guna melon production in the study area, and
3. isolate the socio-economic problems militating against guna melon production in the study area.

METHODOLOGY

Two types of instruments were used to collect data. The first was an interview schedule, designed to elicit responses from the guna melon farmers. The data were on some of the farmers' socio-economic characteristics. The second instrument was field observation. This was considered important because of some likely socio-cultural factors that could affect the production of guna melon.

A pilot survey was first carried out on 30 farmers from two villages in the study area. These two villages were not included in the main survey. An analysis of this pilot survey data led to the removal of some questions that were ambiguous and restructuring of others. This led to the reduction of the time of administration of the instrument on each respondent. It was observed that majority of the farmers had less than two hectares of farmland. The few farmers who had over four (4) hectares were consequently excluded from the survey, as their inclusion would give a false average production figure.

The survey focused on the 2002 harvest season. The survey covered the three (3) major guna melon producing Local Government Areas of the State, namely, Nguru, Gashua and Machina. A list of all guna melon farmers with their addresses was obtained from the headquarters of the State Agricultural Development Programme (ADP). There were a total of 330 guna melon farmers. Fifty (50) farmers were randomly selected from each L.G.A., giving a total of 150.

FINDINGS AND DISCUSSIONS

Following the objectives of the study, this section is divided into 3 sub-sections, namely, (a) some socio-economic characteristics of the farmers, (b) the profitability of guna melon production, and (c) the problems militating against guna melon production.

Socio-Economic Characteristics of Guna Melon Farmers

The characteristics considered in this study include age of farmers, their marital status, family type, education, secondary occupation and farm size, as shown in table 1.

The table shows that 40% of the farmers were between 30-50 years of age. As this age, the farmer is at his prime and is expected to have adequate physical energy to meet the challenges from his farm work.

The table also shows that about 54% of the respondents were married. Field experience showed that the people in the study area are predominantly Muslims. At a given age, a person would be seen as irresponsible if he or she is not married. Marital status is of relevance in this study because married farmers tend to have larger family sizes hence the larger farm size the larger family labour to meet the total farm labour requirement.

Family type is also considered to be important in the study. This is because the traditional African society has essentially an extended family set-up. A man would, thus, view his brothers' children as his own children and the nephews in turn look on him as a

father. This extended family set-up by implication means more family farm labour and consequently higher total crop output.

Higher educational achievement is conceived to put the farmer in a better condition to adopt innovations that would enhance their productivity. Table 1 shows, however, that about 50% of the farmers had no schooling compared with 21% of those with primary and secondary education. Some of the respondents viewed farming as their primary occupation. To them, such occupations as trading, civil service and craftsmanship are secondary occupations. The study revealed (Table 1) that about 56% of the farmers were civil servants/teachers. Investigations revealed that these civil servants/teachers were educated and so could use improved crop production technologies. The additional income from the secondary occupation was also an important source of money for them to purchase the necessary farm inputs.

Table 1 also shows that 46% of the farmers had over 2 hectares of farmland compared with 11% who had below one hectare. This is understandable, as the larger the farmland, the more the output is expected to be, all things being equal.

Profitability of Guna Melon Production

The estimated net returns for guna melon production in the study area for the 2002 harvest season is given in table 2. This shows that the total variable cost was ₦3,980.00, total cost was ₦4,190.00, gross revenue ₦6,000.00 and net farm returns was ₦1,810.00. This result, according to Olukosi and Erabor (1988) indicates that the production is profitable. It is interesting to note that in computing the profitability, no allowance was given to the existence of family labour and possible ownership of bull-drawn cart by the farmer. The profit margin could, therefore, be more if these are taken into consideration.

Socio-economic Problems Militating Against Guna Melon Production

Some of the socio-economic problems militating against the production of guna melon considered in the study are: capital, labour, high cost of inputs, lack of credit facilities, breakdown of work-bull/ox-drawn equipment, inadequate storage facilities, lack of access to agricultural information, insecurity of tenure of land and transportation.

Capital

Investing in guna melon production requires a high initial capital outlay for the acquisition of inputs such as land, seeds, fertilizers, equipment and labour. This survey shows that 80% of the respondents viewed the availability of capital for guna melon production in the area of study as very inadequate. (Table 3). This high percentage of respondents indicates that the problem of capital was enormous.

Labour

About 50% and 20% of the farmers viewed labour as very inadequate and adequate respectively (Table 3). Only 7% of them viewed labour as very adequate. In guna melon production, labour is required for numerous activities such as land and seed-bed preparation, planting, fertilizer application and weeding. Undiandeye and Anogie (2000) found that labour was a problem in wheat production in Borno State. In some, labour may not be an important problem especially if the source of labour is that of the farm family (Undiandeye *et al*, 1999).

High Cost of Inputs

Agricultural inputs such as improved seeds and agro-chemicals are crucial to the efficient production of guna melon. In this study, 90% of the respondents viewed the high

cost of inputs as a problem in guna melon production (Table 3). It is interesting to note that none of them indicated that the cost of inputs was very adequate and only 2% indicated that it was adequate. Government had removed subsidy on agricultural inputs and this appears to affect the farmers adversely. Interestingly, the advice to withdraw subsidies on agricultural inputs came from the World Bank but in developed countries such as the U. S. A. and Britain, the inputs are still subsidized (Undiandeye and Anogie, 2000).

Credit

In agricultural production, credit is important, especially if the farmer lacks the necessary finances to carry out the various farm activities. Often, credit is needed to expand the existing farm, purchasing of inputs, paying for labour or to off-set the transportation costs.

About 20% of the respondents viewed credit availability as very inadequate, 50% as inadequate, 2% as very adequate, and 19% as adequate (Table 3). This finding appears interesting when viewed against some field observations in the study. There were only 3 Community Banks and one People's Bank in the study area, all located in the Local Government Headquarters. These were the only government financial institutions in the area. However, the local financial institutions known as "adache" or "Esusu" were common. This explains the relatively high percentage of respondents who considered credit availability as very adequate and adequate (table 3).

The problem with these local financial institutions was that they did not spread the re-payment of loans over a number of years as the government own financial institutions do. Thus, credit availability remained a major problem of the guna melon farmers.

Breakdown of work-bulls and Ox-drawn Carts

The results show that about 25% and 20% of the respondents considered the availability of work-bulls and ox-drawn carts as very adequate and adequate respectively. On the other hand, only 10% of them considered work-bulls and ox-drawn carts as very inadequate and 15% as inadequate (Table 3).

The work-bulls are used to plough the soil before planting. They can also be used in fertilizer application and weeding if the required equipment are attached.

The ox-drawn carts are used as a means of transporting the ripe guna melon fruits from the farms to the farmers' residences where the fruits are part-processed. This means of transportation is important in guna melon production for two main reasons. Firstly, farmers and farm inputs are transported to the farms. Secondly, the produce (the ripe fruits) are transported to the residences of farmers. Many farms were located far from the homes.

During the pilot survey, it was observed that the commonest method of transporting the guna melon from the farms to the homes where they were part-processed was the ox-drawn cart. The carts were also of uniform size. The total output of guna melon was, therefore, measured as the number of ox-drawn cart loads of the fresh guna melon harvested in the year 2002. It was also observed that the farmers knew field measurement in acres. This was used and later converted into hectares. The unit of analysis for the study was the head of the household because he took major decisions regarding the production of guna melon.

Although the results show that majority of the farmers had no problem with their transportation, field observations showed that the area had little or no access roads. Few commercial vehicles consequently ply some of the roads. During the period of data collection, there were serious petrol shortages and this forced some of the few available vehicles to stop plying the bad roads.

Access to Sources of Farm Information

Table 3 shows that 30% and 40% of the farmers considered their access to farm information very inadequate and inadequate respectively. These figures are high compared with 2% and 8% of them who considered their access to farm information as very adequate and adequate respectively.

Further investigation was carried out to determine the available sources of information to the farmers on guna melon production. About 80% of the farmers reported that they obtained their information on guna melon production from friends and relations and only about 20% got their information from other sources such as village extension agents, radio, and newspapers/magazines.

The implication of these findings is that the farmers' access to information on guna melon production was limited. Yobe State has two television stations and a radio station. However, the area of the study could not receive transmission from these television and radio stations because of the distance. It is too far from the state capital where the stations are located. Furthermore, even the radio stations with good reception in the study area such as the Radio Nigeria, Kaduna, Radio Jigawa and BBC World Service do not have adequate farm programmes as they concentrate more on political issues to the detriment of agriculture.

Information obtained from friends and relations has some limitations. About 50% of the farmers had no formal education, hence their inability to obtain farm information from the mass media such as the radio, television and newspapers/magazines for onward dissemination to other friends and relations. Consequently, availability of sources of farm information is a problem in guna melon production in the study area.

Security of Tenure to Farmlands

About 60% and 10% of the farmers viewed security of tenure to farm-lands as very inadequate and adequate respectively (Table 3). Only 12% of them viewed it as very adequate and 13% as adequate. This insecurity of tenure to farmland, from field observations, arises from the menace of livestock rearers.

Traditionally, livestock feed on crop residues after harvest. In farms inter-cropped with the guna melon, this can no longer be the case because the guna melon continues to grow and develop after the harvest of the main crop. The guna melon plant is also a good animal feed. The young fruits are juicy and animals like it, especially during this season of draught. This is why cattle rearers often deliberately allow animals to graze in the guna melon farms, thereby, bringing conflict between them and the farmers.

Awogbade (1993) however, found that the cause of the conflict between the farmers and livestock rearers was the trespass by farmers into the grazing reserved specially designated for pasturalists as a result of arable land shortages, as more people are now going into farming. The constant conflict between farmers and livestock rearers give rise to insecurity of tenure to land in the study area because it could cause crop farmers to abandon the land in search of livelihood in other sectors of the economy.

CONCLUSIONS AND RECOMMENDATIONS

From the results and analyses above, the following conclusions are made:

a) That guna melon production in the study area is profitable because the gross revenue was more than the total cost, leaving a return of ₦1,810.00 only.
b) Some socio-economic characteristics of the farmers were that: they were between 30 – 50 years of age, married, from extended families had higher education and larger farm sizes.

c) The problems militating against guna melon production in the area included capital, labour, high cost of inputs, credit availability, sources of farm information and security of tenure to farmlands.

It is, therefore, recommended that:

a) Since the production of guna melon in the study area is profitable, the extension agents should put special emphasis on some socio-economic characteristics of the farmers such as their education and farm sizes in order to ensure that they reach guna melon farmers from all socio-economic groups.
b) More government owned financial institutions such as banks and insurance companies should be established in the area to take care of the financial needs of the guna melon farmers, and the few existing ones re-organised to ensure effectiveness.
c) There is need to modify the provisions in the constitution that deals with grazing reserves (the Land Use Act) in the light of the increasing pressure on the land. This should make more land available to farmers and reduce the conflict between guna melon farmers and pasturalists. Nomadic pasturalism should be discouraged.
d) The mass transit system should be re-organised to ensure that rural areas are covered effectively, thus easing the transport problems of the guna melon farmers.
e) The shortages in the distribution of petroleum products (especially petrol) should be solved once and for all, if farmers are to produce and sale at a profit.

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Table 1: Estimated Net Return for Guna Melon Production

A	*Variable Cost (VC)*	₦ :K
	Seed	280.00
	Fertilizer	1,500.00
	Operating Cost of Equipment	300.00
	Labour	
	Land Preparation	500.00
	Seedbed Preparation	500.00
	Planting	400.00
	Fertilizer Application	200.00
	Weeding	500.00
	Total Variable Cost	**3,980.00**

B	*Fixed Costs (FC)*	
	Depreciation on Equipment	210.00
	Total Cost (TVC + FC)	**4,190.00**
	Gross Revenue	**6,000.00**
	Net Returns (TR – TC)	**1,810.00**

Source: Field survey data

Table 2: Some Socio-Economic Characteristics of Guna Melon Farmers.

	Characteristics	% of Respondents
1.	Age	
	Less than 30 yrs	20
	30 – 50 yrs	56
	Over 50 yrs	24
	Total	**100**
2.	**Marital Status**	
	Married	70
	Single	20
	Divorced	10
	Total	**100**
3.	**Family Type**	
	Nuclear	19
	Extended	81
	Total	**100**
4.	**Education**	
	No Schooling	50
	Primary/Secondary School	21
	Post Secondary School	29
	Total	**100**
5.	**Secondary Occupation**	
	Trading	20
	Civil Service/Teaching	56
	Craftsmanship	24
	Total	**100**
6.	**Farm Size**	
	Below 1.0 ha	11
	1 – 2 ha	42
	Over 2 ha.	47
	Total	**100**

Source: Field survey data

Table 3: Some Socio-Economic Problems of Guna Melon Farmers.

	Problem	% of Respondents					Total
		Very inadequate	*Inadequate*	Undecided	*Adequate*	*Very adequate*	
1.	***Capital***	80.0	05.0	03.0	03.0	09.0	100.0
2.	Labour	50.0	20.0	15.0	05.0	15.0	100.0
3.	High cost of inputs	90.0	05.0	03.0	02.0	00.0	100.0
4.	Credit Availability	20.0	50.0	09.0	19.0	02.0	100.0
5.	Work-bull/ox-drawn carts	10.0	15.0	30.0	20.0	25.0	100.0
6.	Access to information	30.0	40.0	20.0	08.0	02.0	100.0
7.	Security of Tenure of Farmland	60.0	10.0	05.0	13.0	12.0	100.0

Source: Field survey data